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ABSTRACT

While the use of computers in college classrooms and writing labs has benefited some students of writing, these benefits have not been as pronounced for basic or English-as-a-Second-Language (ESL) writing students. Operating computers requires motor and mnemonic skills that complicate the task of writing, especially for basic or ESL students, and computers tend to promote a more fragmented and linear view of writing. The Intensive Learning Experience writing program at California State University, Sacramento, is designed to help basic and ESL writers learn composition skills by linking the resources of classroom instructors, lab instructors, and a computer writing lab. The program has separate tracks for native English Speakers with limited skills and for ESL students. Students are placed into classes with low student/teacher ratios and are given access to a computer writing lab. Students also receive instruction in computer operation and word processing and, in the writing labs, are given individualized writing or computer assistance. During the first semester of this four-semester program, content is stressed over form and student-centered methods of instruction are combined with positive commenting strategies. Students participating in this program have shown significant declines in writing anxiety. (JL)

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MAKING CONNECTIONS: COMPUTERS, TUTORS, AND ESL STUDENTS

based on a presentation by
Roberta Ching, Sue McKee, and Nancy Tooker
at the International TESOL Annual Convention
San Francisco
March 6-10, 1990

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WHAT THE RESEARCH TELLS US: BENEFITS AND DRAWBACKS OF COMPUTERS

In recent years as computers in college classrooms and writing labs have proliferated, so have the claims for the benefits that computers can offer writing students. Computers give writers increased control over their writing (King, Birnbaum and Wageman 1984, Daiute 1985). Students write more when they use computers (Daiute 1983). They also write more quickly and are less concerned in early drafts with surface features (Bean 1983). Students find writing with computers a positive experience (Bernhardt, Edwards, & Wojahn 1989) and are more motivated (Bridwell and Ross 1984). Writing on a computer overcomes writer's block and makes students more objective readers of their own writing (Collier 1983, Daiute 1983, 1985). Writers can compose more freely and take more risks because they are freed from the necessity of recopying (Daiute 1983, Lutz 1987). Computers improve student attitudes toward writing (Bernhardt, Edwards, & Wojahn 1989; Daiute 1985). Perhaps most significant in terms of current emphasis on teaching writing as a process, students revise more and are more aware of the process of writing (Bean 1983, Bernhardt, Edwards, & Wojahn 1989, Collier 1983, Daiute 1983). Basic writers generate more ideas, organize them, and express them in better and more varied sentences (King, Birnbaum, & Wageman 1984).

However, many of the same researchers who have found benefits when students use computers to write have also drawn conclusions that raise questions about their value. Teaching has a greater effect on improvement in writing than do computers (Bernhardt, Edwards, and Wojahn 1989). Although the final product

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is longer, less substantive revision occurs when students use word processors (Collier 1983, Daiute 1985, Lutz 1987). Computers promote a more fragmented and linear view of writing, in part because of the limitations imposed by the monitor screen (Collier 1983, Lutz 1987). Operating the computer requires motor and mnemonic skills that complicate the task of writing (Collier 1983, Daiute 1983, 1985). Computers seem to tempt people to substitute writing for thinking (Grow 1988).

The value of using computers to teach writing may be minimal at best (Collier 1983). Students working at computers resist participating in discussions or other traditional classroom activities. They also may regard attendance as optional (Bernhardt, Edwards, and Wojahn, 1989). Some studies have even demonstrated that students revise less when they write with a computer than with pen and paper (Daiute 1985, Harris 1985). Alas, computers do not write and computers do not revise; students do, and in order for them to do so, they need to be taught how. Showing them how to open files, to insert and delete, and to make block moves will not cause them to begin making substantive changes in their writing. Nor should we be surprised. Why should they make substantive changes? Writers do not revise unless they have a purpose for revising. Writers revise to be able better to communicate to an audience of readers. They revise in order to bridge the gap between their personal, idiosyncratic ideas and their readers' reception of those ideas. To use Linda Flower's felicitous phrase, they revise in order to move from writer-based to reader-based prose (Flower 1984).

If placing a basic writer in front of a computer would overcome her resistance to writing, making her overnight an eager and fluent writer, a proficient reviser, and a critical reader of her own writing, then word processing would indeed be the salvation of basic writers and the literacy crisis would be over. Some research, however, has specifically questioned the wisdom

of having basic writers use computers. Collier, in his protocol study of four inexperienced writers, found that the weaker writers profited least from the use of word processing. He noted "that an inexperienced writer might well find revision on a word processor more complex and more stressful than revising by hand" (Collier 1983). Although Daiute may find the flashing cursor an audience that prompts her to write more (Daiute 1983), basic writers feel no such compulsion. For them it may instead be a goad, reminding them of how little they have to say on the subject at hand, how little they want to say it, how soon the assignment is due. Wayne Boothe mocks academics, fluent writers for whom omputer may simply lead to less reflective and less polished writing, when he says that computers function only to "catch the overflow" (Boothe, 1984). Basic writers, for the most part, have no overflow and can sit mute in front of a blank screen and blinking cursor quite as readily as in front of a blank piece of paper.

We need, then, to consider whether we are doing basic and ESL writers, whose writing is often labored under the best conditions, a favor in asking them to learn the skills of word processing at the same time we are asking them to learn to become more effective writers. The purpose of this study has been to evaluate the positive and negative effects of computer use in relation to student attitudes and writing behaviors when ESL students write in a computer lab situation and to suggest ways in which the benefits of the lab can be maximized.

The issue for basic writers is not initially whether they use a pen and pencil or a word processor. The issue is whether they have a reason for writing and a sense of the audience, the reader, for whom they are writing. Because this issue is fundamental, what matters is not the computers themselves, but the way in which they are used, the way in which computers are tied to instruction. Ann Raimes, referring to ESL students, wrote, "To take advantage of the extraordinary

generative power of language, we need to give our students what is always in short supply in the writing classroom--time" (Raimes 1985) The same is true of other basic writers. There is no quick fix. Computers can facilitate writing for basic writers, but not without instruction in the use of the computers, the easy part, and instruction in the process of writing, which has been and always will be the hard part.

THE BASIC/ESL WRITING PROGRAM

The Intensive Learning Experience writing program at California State University, Sacramento, helps basic and ESL writers to write by linking the resources of classroom instructors, lab instructors, and a computer writing lab.

PLACEMENT INTO THE PROGRAM

These basic writers are students who place in the bottom quartile of the English Placement Test, the standardized test administered to all students without credit for freshman composition in the California State University system. In addition, ESL students are given a locally-administered placement test (dictation, cloze passage, and 30 minute holistically scored essay) in order to place them more accurately within the ESL track. The writing program as a whole is made up of two tracks, one for native speakers and one for ESL students. Each track has four semester-long courses culminating in freshman English and its ESL equivalent. The students who use the computer writing lab, approximately 250 per semester, are enrolled in courses that are two semesters away from the baccalaureate level course.

PROFILE OF THE STUDENTS

The students who enroll in the ESL and basic writing classes at California State University, Sacramento, are often non-traditional students. Although generalizations about them are dangerous, we can make certain observations based on data collected in our study (see Figure 1). Especially among ESL students,

many are not freshmen; although upper-division students, they are enrolled in pre-college level classes because their writing skills are inadequate for university level work. ESL students are fairly evenly divided by gender; females outnumber males in basic writing classes. Students in these classes are also significantly older than typical freshmen.

The students are placed in ESL and basic writing classes in about equal numbers; however, even among the non-ESL basic writers, large numbers bilingual or come from homes where a second language is spoken (see Figures 2 and 3). Administration of the Canfield Learning Styles Inventory reveals that there is a great diversity of learning styles among both groups of students; however, over half of the basic writers fall into the categories with social learning preferences while almost half (42%) of the ESL students have conceptual learning preferences (see Figure 4).

Although the students that are enrolled in our basic and ESL writing classes are a diverse group in many respects, both groups exhibit the reading and writing problems that we associate with basic writers: first language or dialect interference, little exposure to written forms of English, lack of critical thinking skills, patterns of avoidance of reading and writing, and enrollment in majors perceived to make lesser demands on language skills. Therefore, we have designed a program that takes into account their diversity while giving them opportunities for extensive reading and writing experience in a supportive classroom and lab environment.

THE WRITING PROGRAM

Bernhardt, Edwards, and Wojahn in their investigation of effects of introducing computers into freshman composition classes (Bernhardt, Edwards, and Wojahn 1989) found that computers had a positive effect for some students, but that the teacher had a much stronger effect. They concluded that "if we do

introduce computers, we need to work with the teachers to encourage adaptation to the technology." As these researchers have noted, we cannot simply put computers in a room and expect to see dramatic improvement in student writing and revising. Teachers, not machines, are what help student writers to improve. The goal of the writing program at California State University, Sacramento, is to integrate computers into a composition program for ESL and basic writers in such a way that computers and teachers, both in the classroom and the lab, function together to help student writers improve.

Drawing upon the insights which recent composition research has given us about the writing process (Flower and Hayes 1981, Perl 1979, 1980, Pianko 1979, Sommers 1980, Raimes 1985, Zamel 1982, 1983), the CSUS writing and ESL coordinators have developed a program which helps basic writers find ideas, organize them and develop them through multiple drafts, edit their writing for grammatical and mechanical accuracy, and finally produce essays of which they can be proud . Considering that these are students who in past days and in other programs would have been relegated to grammar workbooks and the writing of sentences and paragraphs, this is no mean feat.

Students enroll in a four unit course, which includes three units of an integrated reading/writing course taught by skilled and experienced instructors and one unit of computer writing lab. Both class and lab enroll twelve students since the program receives special funding designed to give added support to "at-risk" students as they enter the university. The lab is staffed with two lab instructors, generally graduate students in the English or TESOL M.A. programs. The lab instructors are highly qualified, often having been teaching assistants in either freshman composition or ESL classes. The lab is outfitted with twelve Macintosh computers and MacWrite II, a word processing program with built-in spellchecker and thesaurus. The choice of computer and

software is signficant since some of the disappointing early research on the use of computers to teach writing had students using mainframe computers which were vastly more complex and frustrating than the compact and user-friendly Macs. The MacWrite program is easy to access and easy to learn even for students who have had no previous computer experience.

Students attend the lab one hour a week and are expected to attend open lab a minimum of a second hour a week. Most of the labs are scheduled immediately after class so that students can immediately implement what they have been discussing with their teachers and peers. If teachers are free during that hour, we encourage them to accompany their students to lab and use the time for conferencing at the computer. Because students know each other from class, they can use each other as a resource for help both with the computers and in writing.

ORIENTATION TO THE LAB

During the first two meetings of the semester, the lab instructors teach students how to access the computer program and introduce them to the keyboard and features such as scrolling and line wrap-around. They also learn to perform a few simple computer functions, such as insert and delete. Students who cannot type are directed to a typing tutor program so that they can acquire elementary typing skills on their own during open lab hours. Students who are poor typists are at a disadvantage working with computers, but the disadvantage seems to be fairly short term since 90.5% report that they are comfortable using the computer at the end of one semester. Although experienced writers often prefer to compose at the computer, we have found that almost no students at this level can do this. The double tasks of operating the computer and discovering what they want to say is more than most basic writers can mangage. We require that students come to class with a handwritten rough copy of their essay.

THE ROLE OF THE LAB INSTRUCTORS

By the third lab meeting students have written their first diagnostic essay and teachers have introduced the concept of making changes in content and organization in order to communicate ideas more effectively to a reader. They have also explained to students the value of postponing attention to errors for a later draft. Students come to lab ready to implement their teachers' suggestions. However, students often fail to read what teachers have written on their papers and when they do read, they often fail to understand (Zamel 1985). Although teachers in our program follow sound practices in marking papers, responding in first drafts to content and organization, asking questions which will be prompts for revision, and avoiding abbreviations and composition jargon in their comments, students still often come to lab baffled by what their teacher has asked them to do.

Furthermore, most of the evidence so far reveals that the ease of making changes with a computer does not guarantee that those changes will be made. Daiute comments, "So far, one of the biggest surprises about the effects of word processing on the writing process has been that the availability of such features as the block move does not necessarily lead to text reorganizations. . . . research findings suggest that simply having the capacity to rearrange texts easily has not greatly increased students' willingness to revise." (Daiute 1985). In one study of students in a freshman honors English course, students likely to be better revisers than our students two semesters away from college level, evaluation of their writing for changes that affected meaning and/or organization of discourse showed that these writers made fewer revisions when they used word processing than when they did not. Even experienced writers, when left to their own devices, tend to restrict themselves to local editing of grammar, spelling and punctuation. As Gerald Grow, discussing the problems of

experienced writers using word processing, remarks, "Computers seem to tempt people to substitute writing for thinking" (Grow 1988).

To ensure that basic writers really make substantive changes in their writing, changes that require thinking, they need to interact face-to-face with that nebulous "audience" that students are told to consider when they write. The lab instructors are trained to take that role. Quickly skimming the teachers' marginal and end notes as well as the essay itself or a part of it, they can ask questions, seek additional information, clarify connections, encourage the students to read and reread their own writing, and prompt them in more ways than written comments or computer writing aid can. They become the "questioning voice" that more experienced writers have internalized. Furthermore, they are trained to return to students periodically to make sure that the students' efforts at meeting their readers needs are successful.

Writing with a computer is different from writing with any other medium in a fundamental way. The text on a computer until captured and fixed by the printer is completely fluid. Each addition, deletion, reorganization or other change creates, in effect, a new draft. This fluidity, if recognized, can be liberating for basic writers for whom handwriting is often slow and painful. Now they can experiment with their writing without the fear that the new mistakes they make will require yet more laborious effort with pen and eraser. Lab instructors can take advantage of this by encouraging them to try out different alternatives at the level of phrase, sentence, and paragraph and select among them the ones that work best, perhaps in consultation with other members of their class. Students can learn by their own experience that writing is a question of making choices, of selecting among options, not a matter of finding the right answer.

Once students are satisfied with the content and organization of their

essays, they turn to the task of editing them for grammatical and mechanical correctness. Basic writers often have trouble identifying their own errors (Daiute 1983) and the difficulty of reading on a computer screen (Haas 1989) may increase their difficulty. Therefore, teachers selectively mark the hard copies of the essays for errors before students return to the lab. Often they also discuss problems that students have in common or have students work together in workshops to identify and correct their errors. In lab then students make the needed changes in their text. The computer makes it easier for students to make these changes, which would require rewriting the entire essay with pen and paper, but by no means assures that students will make them. Therefore, lab instructors encourage student to make the changes, help them if they are unsure about a point of grammar or a mechanics, and give students instantaneous feedback. By separating the editing phase from the revising phase of writing, teaching the students strategies for finding their errors (looking systematically for one type of error at a time), and having a real reader to help them find ones that they can't see, students become more successful monitors of their own writing. After they finish the editing process, students can print their final draft to hand in.

One of the hazards of a computer writing lab is that students will become focused on the computer and forget that the ultimate object of the hardware and software is to facilitate their writing processes. They often view the tutors as merely computer technicians, there mainly to help them use the machinery. In order to communicate to the students our vision of the lab and its place in the writing course, we have created a brief video to orient students to the lab. We show it to them during the second lab meeting to reinforce in a visual medium what their teachers and tutors have been telling them.

THE STUDY

In order to answer some questions that have been raised about the effects of using computers in writing classrooms, we designed a research study to give us information about the attitudes that our students have about writing and computers. Although our experience and other research made us believe that our students were reluctant writers and revisers and preliminary evaluations caused us to believe they were enthusiastic about writing with computers, we wanted to test these perceptions in a more systematic way. Therefore, during the fall of 1989 we administered the Daly-Miller measure of writing apprehension (MWA) (Daly and Miller 1975) and a computer attitude survey which we created modeled after the MWA survey. The MWA was not designed or normed for the students that we have labeled basic writers nor for non-native speakers. Gungle and Taylor (1989) recommend the development of a writing anxiety measure specifically for second language students. Lacking such an instrument, we decided to use the MWA for the study, although aware of its limitations. From this data we have developed a picture of how our students feel about writing and computers.

Not unexpectedly, at the beginning of the semester our students showed high levels of writing anxiety. After a semester of instruction that focused on content before form and used student-centered methods of teaching along with positive commenting strategies, all classroom techniques associated with reduced writing anxiety (Gungle and Taylor 1989), our students showed a statistically significant decline in writing anxiety (see Figure 5).

Their attitudes towards computers changed less signficantly. They entered the course with positive feelings about computers, although sometimes based on unrealistic expectations about what computers can do. They left still feeling positive, but the naive computer users were much more aware that computers would not solve their writing problems (see Figure 6).

As the semester continues, students are introduced to more functions of the computer. From simply inserting and deleting on the screen, they progress to printing, underlining, moving chunks of text, and using the spellchecker. At the same time, they become more sophisticated in revising, editing, and evaluating their own and others' writing. They become less dependent on their instructor's comments and become better peer editors. By the end of the semester, most instructors rely on peer editing to guide students in revising their first drafts. Lab instructors no longer need to intervene as much in the students' writing processes. At the same time, novice computer users have become comfortable with their machines and the lines for open lab have shrunk as students become more efficient and don't need to put in as many extra hours. These students becoming independent writers and revisers by the end of the semester, prepared for the next course in the sequence where the student-teacher ratio is higher and no lab is available.

The program that I have described is fairly unique, both with respect to the small class size and the high student-tutor ratio in the lab. It is expensive and certainly not within the reach of many writing programs. It is also not a panacea. Nearly all students in the program make progress in their writing, but not all make sufficient progress to enable them to pass the holistically scored exit exam at the end of the semester. But it is effective in meeting the needs of a group of basic writers who begin their university careers with many counts against them. By giving them writing as well as computer skills in a supportive and humane environment, it helps to equalize them in relation to their more advantaged peers.

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SOFTWARE

MacWrite II, Release 1.0. 1989. Claris Corporation.

Typing Tutor IV. 1987. Kriya Systems, Inc., and Simon & Schuster.

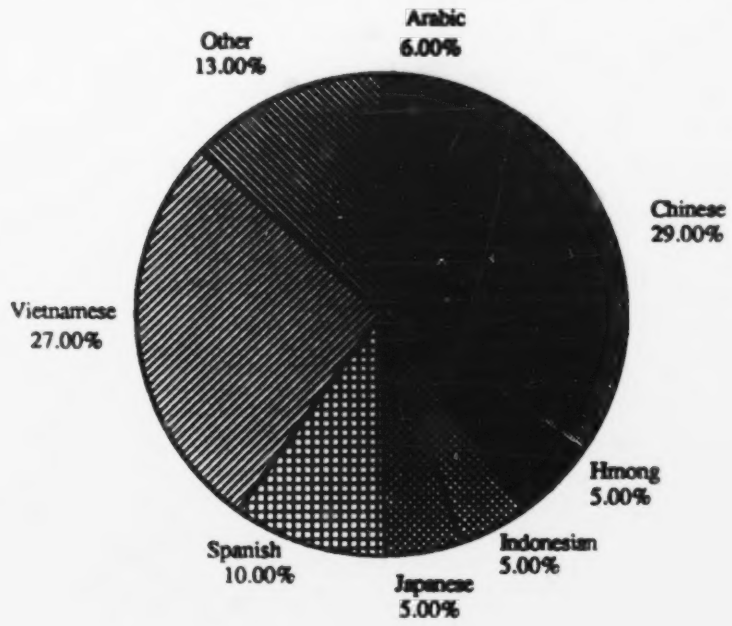
Figure 1

Profile of Intermediate ESL and Basic Writers

	Intermediate ESL	Basic Writers
Number:	101	122
Class Level:	Freshmen 44% Non-Freshmen 56%	Freshmen 84% Non-Freshmen 16%
Gender:	Male 51% Female 49%	Male 45% Female 55%
Average Age:	24 yrs.	23 yrs.
Major:	Engineering & Computer Science 30% Business & Accounting 8% Undeclared 8%	Business & Accounting 22% Undeclared 18% Engineering & Computer Science 13% Liberal Studies 9% Criminal Justice 8%
Reading Test Scores:	(Stanford Diagnostic Reading Test) 6.65	(Nelson Denny Reading Test) 9.05

Figure 2

First Language and Ethnicity:
Intermediate ESL Writers' First Language



Intermediate ESL Writers' Ethnicity

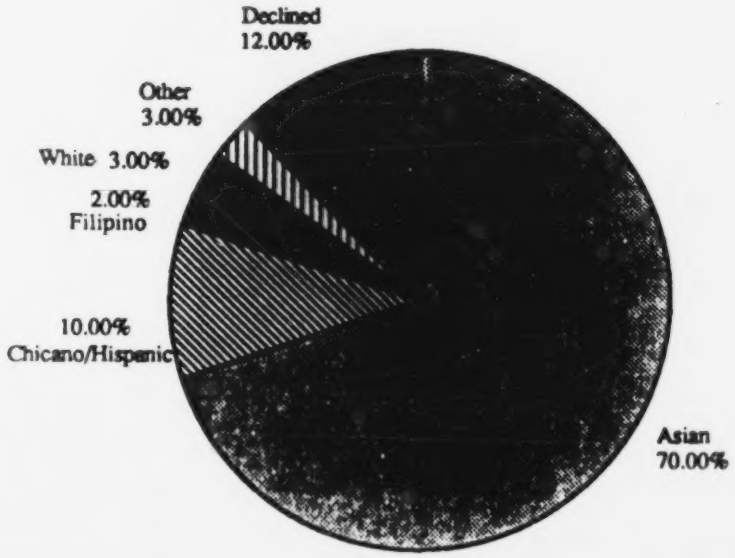


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Figure 3

First Language and Ethnicity: Basic Writers' First Language

Basic Writers' Ethnicity

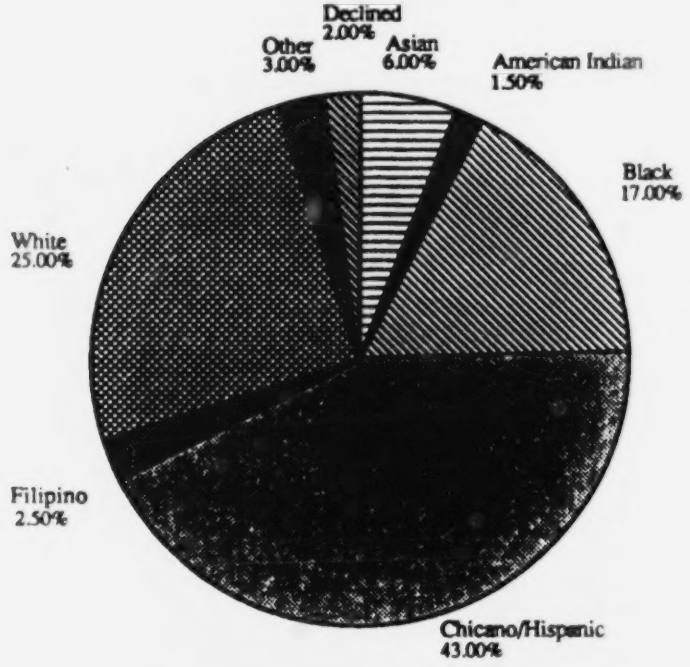

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Figure 4

Preferred Learning Styles of ESL and Basic Writers
Canfield Learning Styles Inventory

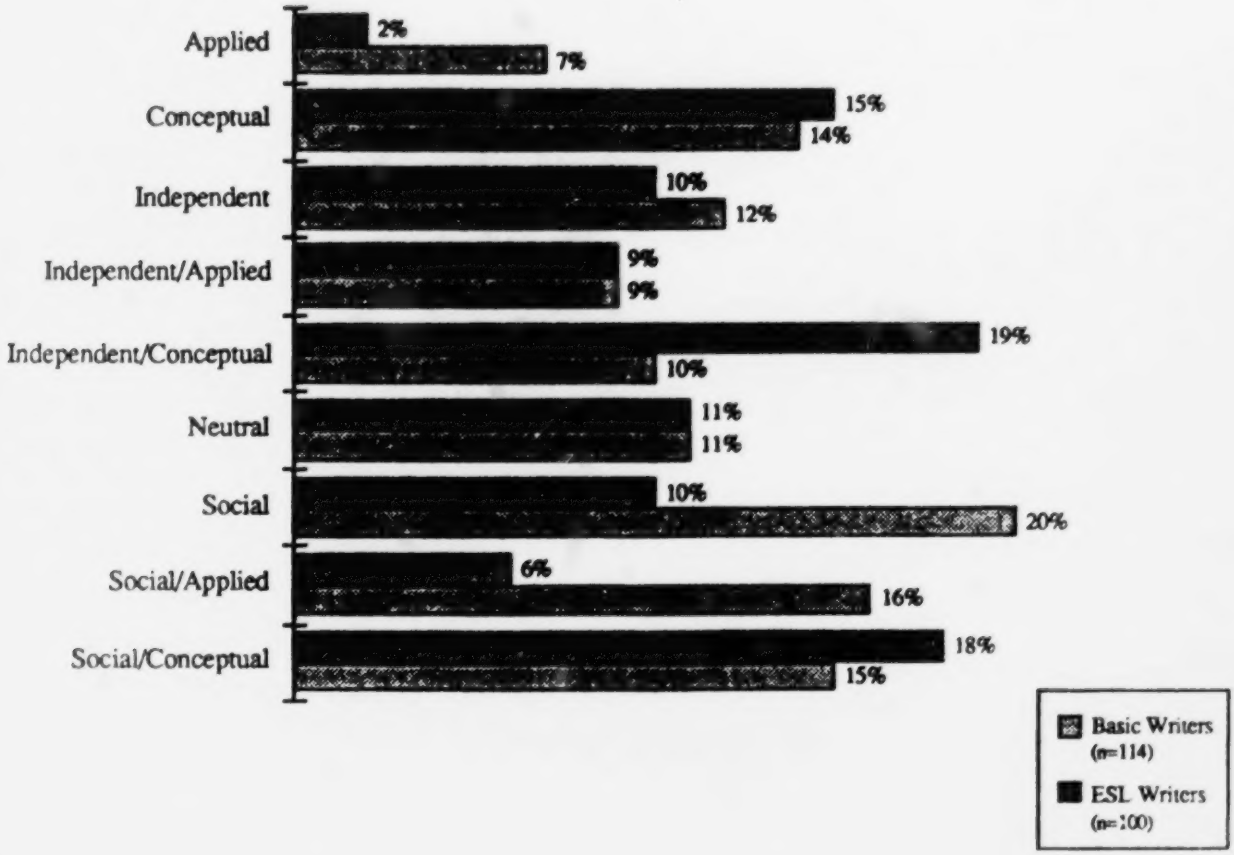

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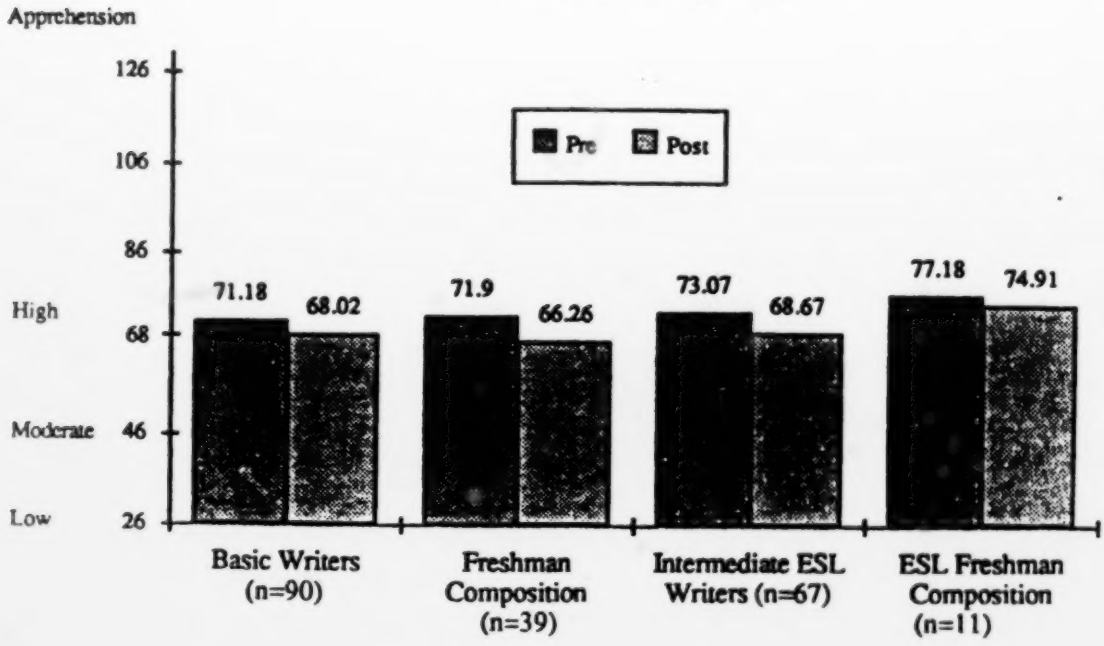
Figure 5

Average Pre/Post Writing Apprehension Scores

Miller-Daly Writing Survey



Non-parametric tests of ranked differences indicated significant differences at or below the .05 probability level for all groups except the ESL Freshman Composition group (due to small sample size).

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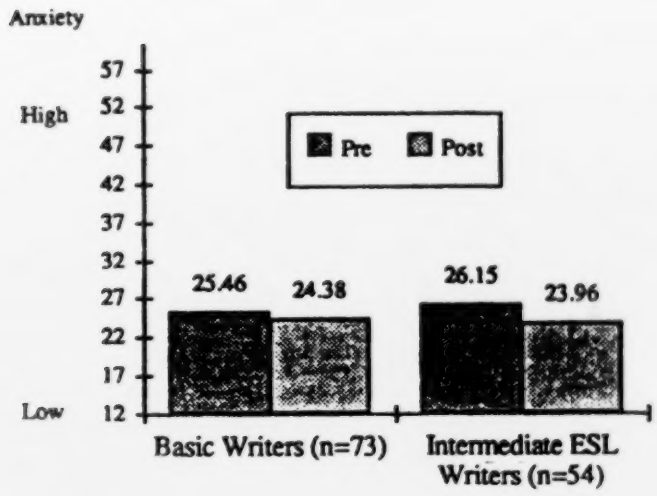
Figure 6

Average Pre/Post Computer Anxiety



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